

CLAIMS

1. A method of production of a homopolymer or copolymer or homo-oligomer or co-oligomer product characterised in that the product is obtained by condensation reaction of a diaminoanthracene, substituted or not, optionally with a diiminoanthracene substituted or not in the absence of anthraquinone substituted or not.

2. A method as claimed in claim 1 characterised in that the condensation reaction is carried out under vacuum in the absence of any solvent.

3. A method as claimed in claim 1 characterised in that the condensation reaction is carried out in an aliphatic carboxylic acid e.g. glacial acetic acid or pivalic acid.

4. A method as claimed in claim 2 or claim 3 characterised in that the condensation reaction is carried out between a diaminoanthracene substituted or not with a diimino anthracene substituted or not.

5. A method as claimed in claim 1, 2, 3 or 4 characterised in that the substitution is such that the product is a homopolymer or homo-oligomer.

6. A method as claimed in claim 1, 2, 3 or 4 characterised in that the substitution is such that the product is a co-polymer or a co-oligomer.

1-2, 5-6, 8-10
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1, 3, 5-6, 8-10

A20, A19, 5H 5

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7. A method as claimed in any one of claims 1 to 6 characterised in that the diaminoanthracene is a 9,10-diaminoanthracene.

8. A method as claimed in any one of claims 1 to 7 characterised in that the sole
5 reactant is DAA.

9. A method as claimed in any one of claims 1 to 6 characterised in that the only reactants are one or more substituted DAAs and DAA.

10 10. A method as claimed in any one of claims 1 to 6 characterised in that the only reactants are substituted DAAs which may be the same or different.

11. A method as claimed in any one of claims 1 to 6 characterised in that the only reactants are DAA and DIA.

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12. A method as claimed in any one of claims 1 to 6 characterised in that the only reactants are one or more substituted DAAs and DIA.

13. A method as claimed in any one of claims 1 to 6 characterised in that the only
20 reactants are DAA and one or more substituted DIAs.

14. A method as claimed in any one of claims 1 to 6 characterised in that the only reactants are one or more substituted DAAs and one or more substituted DIAs.

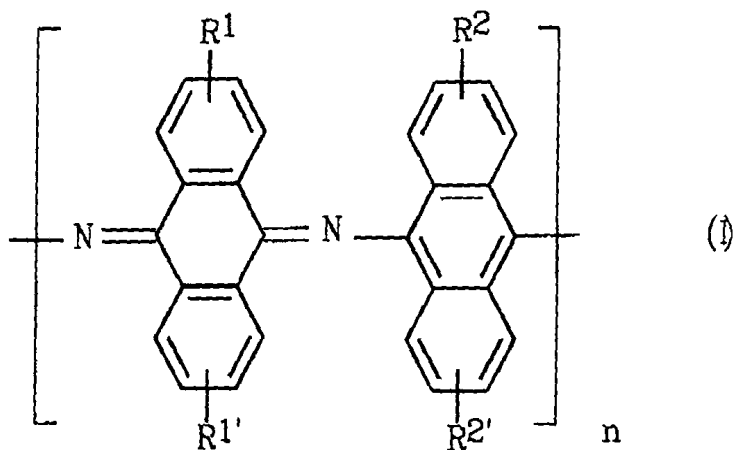
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15. A method as claimed in any one of claims 11 to 14 characterised in that the ratio of DAA to DIA is in the range 5:1 to 1:5.

16. A method as claimed in claim 15, characterised in that the ratio of DAA to DIA is in the range 3:1 to 1:3.

17. A method as claimed in claim 16, characterised in that the ratio of DAA to DIA is in the range 2:1 to 1:2.

18. A method as claimed in claim 1 characterised in that the product has the general formula I

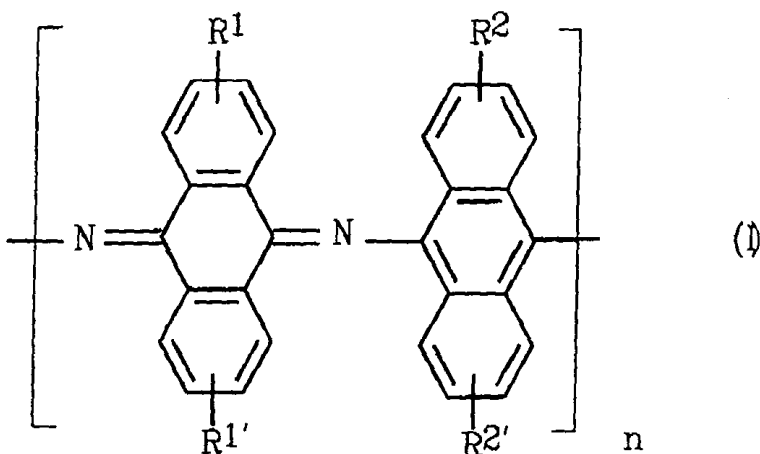


where, R^1 may be the same as or different to $R^{1'}$, which may be the same as or different to R^2 , which may be the same as or different to $R^{2'}$ and each of R^1 , $R^{1'}$, R^2 ,

and $R^{2'}$ is a hydrogen atom or $-CH_3$, CH_3CH_2- , $-OCH_3$, $-OCH_2CH_3$, $-CH_2OCH_3$, $-CH_2OCH_2CH_2OCH_3$, methoxyethoxyethoxymethyl, aryloxymethyl, phenyl, Cl, Br, CN or NO_2 , $-CH_2COOR'''$ or $-CH_2NHCOR'''$ (where R''' is $C_1 - C_6$

alkyl or a phenyl or biphenyl group), or a $C_1 - C_5$ alkyl group, or an aryl group e.g. a benzyl group, or an $-SO_3H$ group or a hydroxyl group or a $C_1 - C_5$ alkoxy group or an H_2PO_3 group, and R^1 and $R^{1'}$ are different to R^2 and $R^{2'}$ and n is an integer ranging from 2 to 100 preferably 6 to 20.

- 5 19. A method as claimed in claim 1 characterised in that the product has the general formula I



- 10 where, R^1 may be the same as or different to $R^{1'}$, and each of R^1 and $R^{1'}$ is a hydrogen atom or $-CH_3$, CH_3CH_2- , $-OCH_3$, $-OCH_2CH_3$, $-CH_2OCH_3$, $-CH_2OCH_2CH_2OCH_3$, methoxyethoxyethoxymethyl, aryloxymethyl, phenyl, Cl, Br, CN or NO_2 , $-CH_2COOR'''$ or $-CH_2NHCOR'''$ (where R''' is $C_1 - C_6$ alkyl or a phenyl or biphenyl group), and R^2 may be the same or different to $R^{2'}$ and
- 15 each of R^2 and $R^{2'}$ is a hydrogen atom or a $C_1 - C_5$ alkyl group, or an aryl group e.g. a benzyl group, or an $-SO_3H$ group or a hydroxyl group or a $C_1 - C_5$ alkoxy

group or an H_2PO_3 group, and R^1 and $\text{R}^{1'}$ are different to R^2 and $\text{R}^{2'}$ and n is an integer ranging from 2 to 100 preferably 6 to 20.

20. A method as claimed in claim 18 or claim 19 characterised in that R^1 is the same as $\text{R}^{1'}$ but is different from R^2 and $\text{R}^{2'}$ and in that R^2 and $\text{R}^{2'}$ are the same.
21. A method as claimed in claim 18 or claim 19 characterised in that R^1 is the same as $\text{R}^{1'}$ and as R^2 and $\text{R}^{2'}$ but is not hydrogen.
22. A method as claimed in claim 18 or claim 19 characterised in that R^1 is different from $\text{R}^{1'}$ and R^2 is different from $\text{R}^{2'}$ and R^1 and $\text{R}^{1'}$ are both different from R^2 and $\text{R}^{2'}$.
23. A method as claimed in any one of claims 18 to 21 characterised in that R^1 and R^2 are not hydrogen and in that $\text{R}^{1'}$ and $\text{R}^{2'}$ are not the same.
24. The polymeric or oligomeric product obtainable from the reaction of an aromatic diamine with itself or a substituted form thereof or with a diimino version or a substituted version thereof, characterised in that the diamine is a diaminoanthracene which is substituted or is not substituted, and the diimine is diiminoanthracene which is substituted or not, and in that the reaction is by melting under vacuum in the absence of solvent and in the absence of anthraquinone whether substituted or not.

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25. The polymeric or oligomeric product obtainable from the reaction of an aromatic diamine with itself or a substituted form thereof or with a diimino version or a substituted version thereof, characterised in that the diamine is a diaminoanthracene which is substituted or is not substituted, and the diimine is diiminoanthracene which is substituted or not, and in that the reaction is in solution in an aliphatic carboxylic acid in the absence of anthraquinone whether substituted or not.
26. The product as claimed in claim 25 characterised in that the acid is glacial acetic acid.
27. The product as claimed in claim 25 characterised in that the acid is pivalic acid.
28. A transparent electroconductive coating comprising a product made by a method as claimed in any one of claims 1 to 23 or a product as claimed in claim 24, 25, 26 or 27.
29. A static shielding material comprising a product made by a method as claimed in any one of claims 1 to 23 or a product as claimed in claim 24, 25, 26 or 27.
30. A display device which contains a layer characterised in that the said layer comprises a product made by a method as claimed herein.

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31. A display device as claimed in claim 30 characterised in that the layer has a hole transporting function.

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